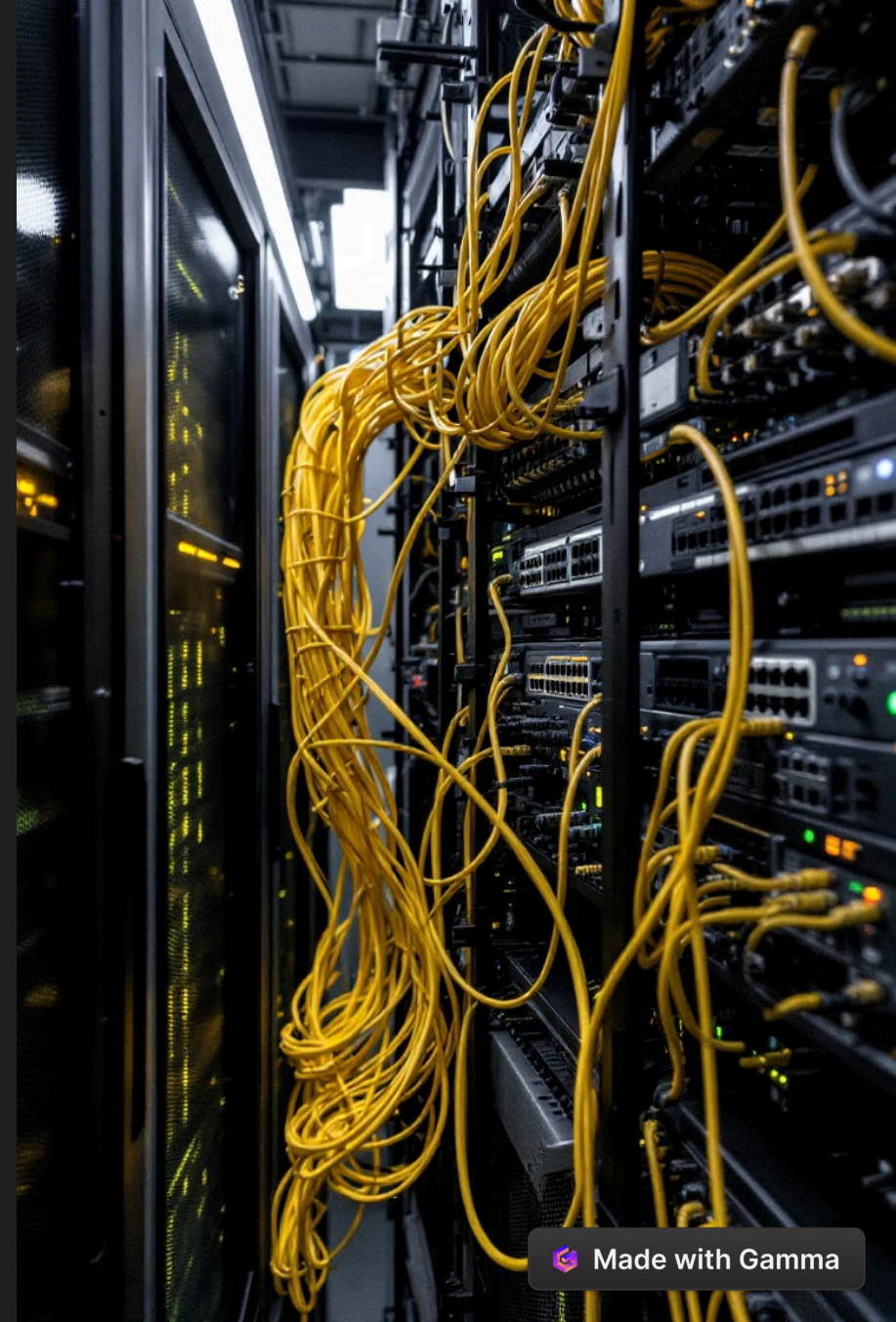
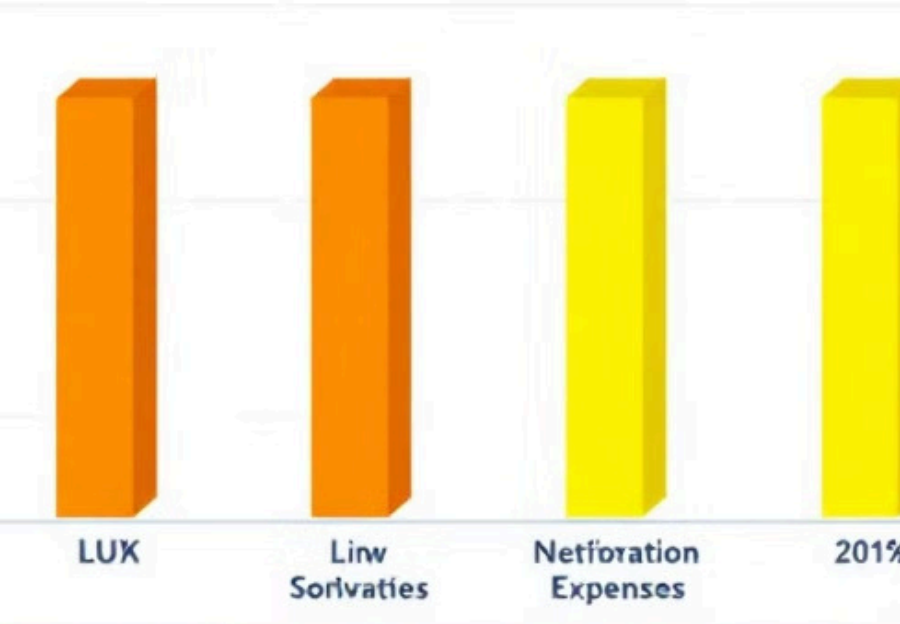


Secure Network Design by NERD CHINET

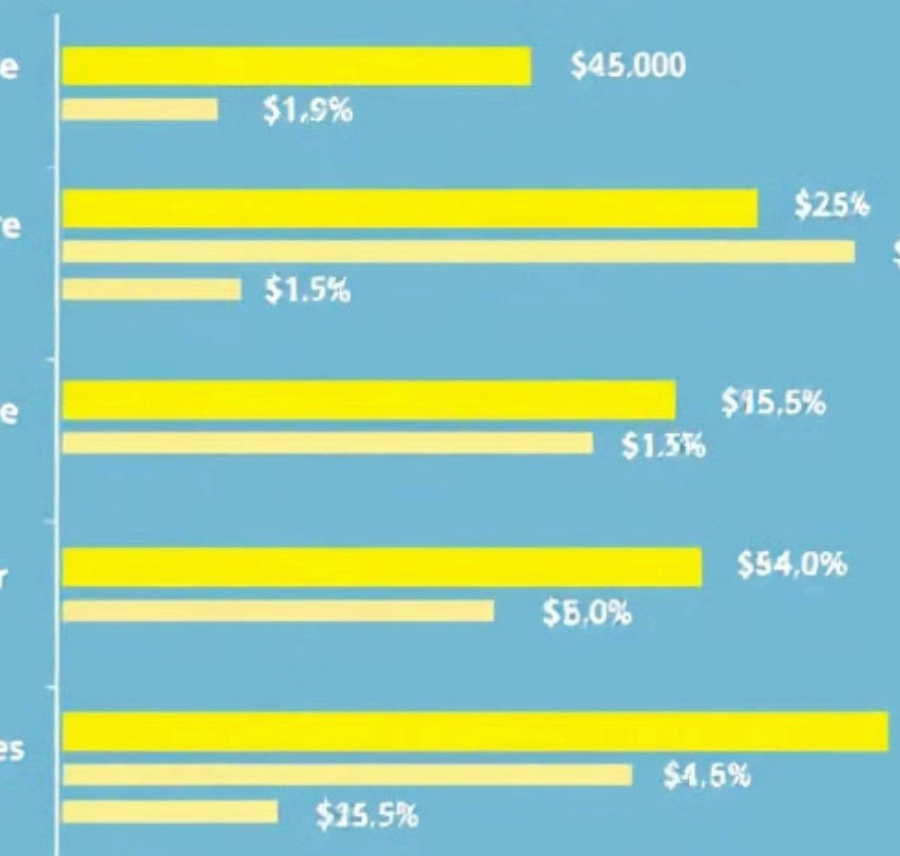
NERD CHINET presents a comprehensive proposal for a Secure Network Design, offering a scalable, secure, and cost-effective solution for office networks. This proposal, dated 10/2024, outlines a detailed plan encompassing hardware devices, software licenses, labor costs, and additional services. The design features a DMZ and four distinct sectors: Management, Study, Production, and Support, ensuring proper IP allocation, DNS resolution, and utilizing VLAN segmentation, ACL-based security, and centralized services.



COSTS FOR NETWORK DESIGN PROJECT



Costs for Network Design Projects



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Cost Simulation Overview

1

Hardware Devices

Total cost: €10,695. Includes core router, Layer 3 switch, Layer 2 access switches, servers, laptops with console cables, secured cabinets, and network cables acquired via auction.

2

Software Licenses

Total cost: €465. Includes Radius Authentication Software and iSCSI Software. Cisco Packet Tracer is free (student version), and DNS/DHCP services are included with Server OS.

3

Labor Costs

Total cost: €3,627. Covers network design, hardware setup, configuration, testing, documentation, and presentation preparation.

4

Additional Services

Annual cost: €2,511. Includes maintenance and monitoring contracts.

5

Total One-Time Cost (excluding annual services):

€15,159 Total

Network Topology and Components

Devices

Core Router, Layer 3 Switch, Layer 2 Access Switches (for each sector & DMZ), Various servers (DHCP, DNS, iSCSI, Radius)

Sectors and VLANs

Management (VLAN 10), Study (VLAN 20), Production (VLAN 30), Support 1 (VLAN 40), Support 2 (VLAN 50), DMZ (VLAN 100)

IP Addressing

Each VLAN assigned a /24 subnet in the 192.168.x.0 range. Servers in DMZ: DHCP (192.168.100.2), DNS (192.168.100.3), iSCSI (192.168.100.4), Radius (192.168.100.5)



DHCP and DNS Configuration

DHCP Server

Located in DMZ (192.168.100.2).
Scopes defined for each VLAN,
allocating IP ranges from x.100 to
x.150.

Default Gateways

Each VLAN's default gateway
assigned to the corresponding
Core Router interface IP (e.g.,
192.168.10.1).

DNS Server

Located in DMZ (192.168.100.3).
Configured with zones for
internal domain names to
simplify network access.

iSCSI and Radius Server Setup

1 iSCSI Server

Located in DMZ (192.168.100.4). Provides shared storage for critical files and backups, accessible by authorized devices.

2 Radius Server

Located in DMZ (192.168.100.5). Offers centralized authentication for network devices, enhancing security by allowing only authorized users to access network resources.

3 Radius Configuration

Core Router configured with IP 192.168.1.1, username: Management1, password: password, client secret: password.



VLANs, ACLs, and Security Measures

1

VLAN Configuration

VLANs 10-50 for different sectors, VLAN 100 for the DMZ.

2

ACL Implementation

ACLs control inter-VLAN traffic, allowing only necessary communication between VLANs and restricting access to DMZ servers.

3

DMZ Security

Servers in the DMZ are accessible only through ACLs, acting as a firewall.

4

Static Routing

Configured to enable communication between the router, Layer 3 switch, and VLANs.

Security:

VLANs

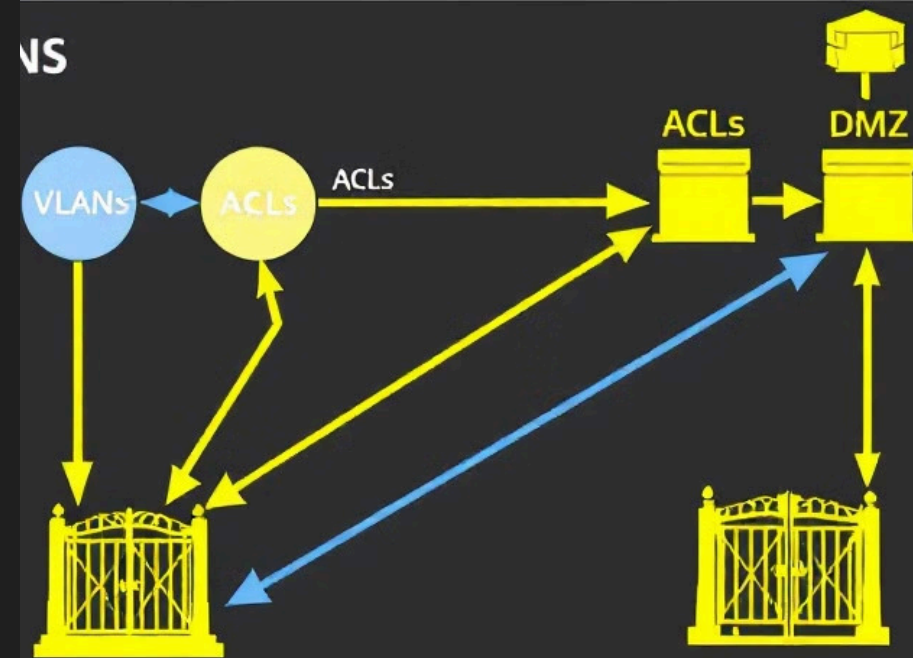
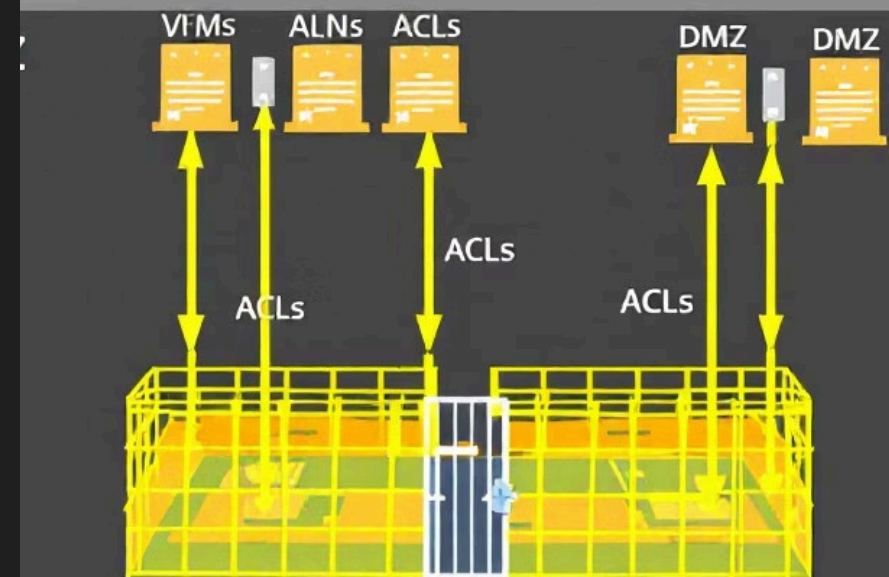


Diagram:





Scalability and Security Strength

Scalability	Security Strength
Modular design allows for adding VLANs, devices, or sectors	ACLs for strict access control
DHCP's dynamic IP assignment streamlines device additions	Radius Authentication for centralized user management
Network can grow without compromising performance	DMZ isolation reduces potential security breaches

Cost-Effectiveness and Physical Security



VLAN Segmentation

Maximizes resource utilization without additional physical routers or firewalls.



Centralized Services

Reduces hardware redundancy, simplifying maintenance.



Secured Cabinets

Installed for critical network equipment, accessible only to authorized personnel.



Management Laptops

Two laptops with console cables provided for local management of network equipment.



Maintenance, Monitoring, and Procurement

Maintenance Contract


Offers preventive and corrective maintenance of equipment, ensuring long-term reliability.

Monitoring Contract

Provides real-time monitoring of the infrastructure, enhancing network security and performance.

Public Auction Purchases

Equipment acquired through public auctions, reducing costs while ensuring high-quality materials. Network cables purchased at favorable prices, optimizing the project budget.



Payment Terms and Project Duration

1

Payment Schedule

30% due upon signature,
30% at project commencement,
30% at project completion,
10% upon finalization.

2

Installation Duration

10 days

3

Offer Validity

1 month

4

Contract Duration

3 years with indexation for each year